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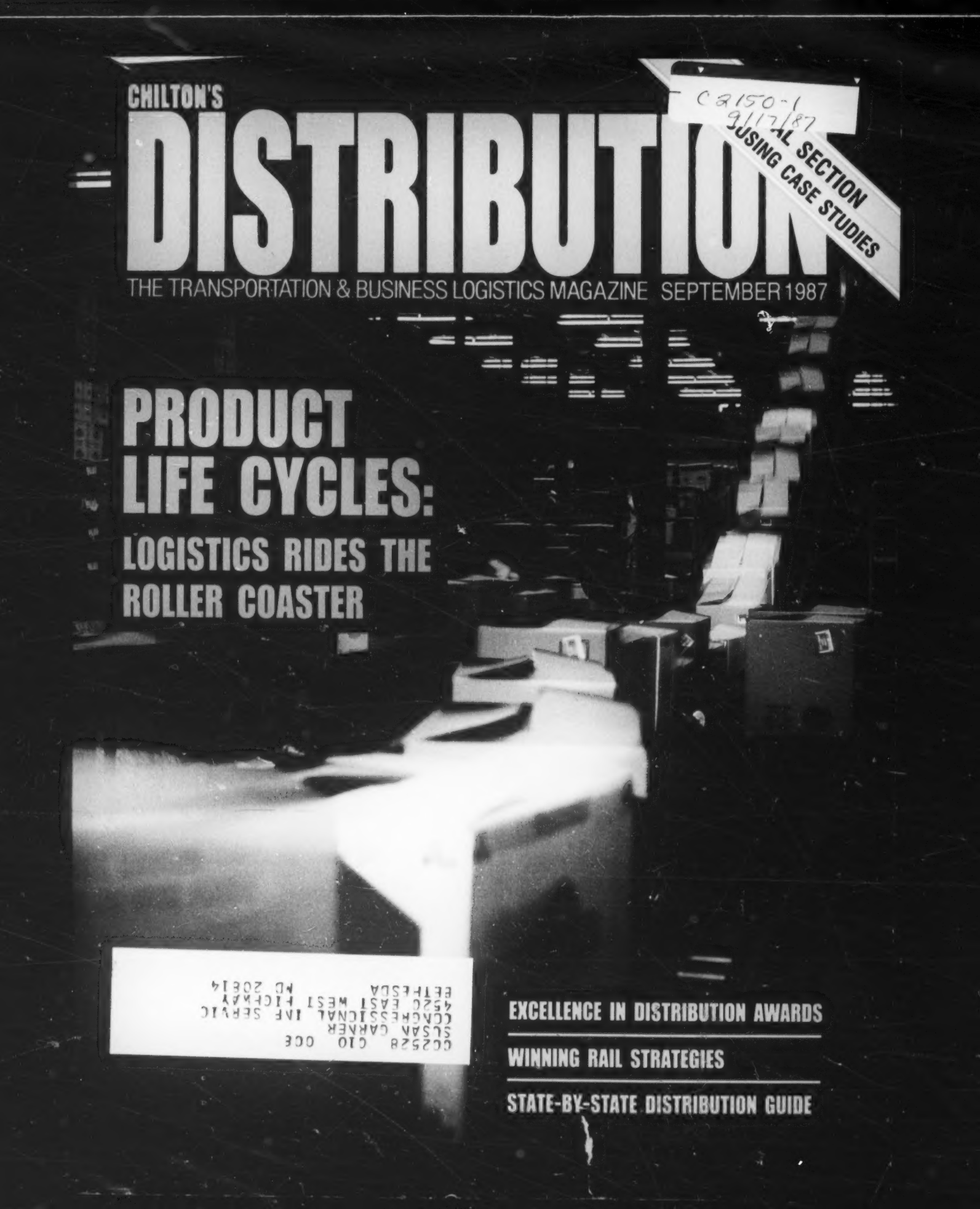
USING CASE STUDIES

CHILTON'S

DISTRIBUTION

THE TRANSPORTATION & BUSINESS LOGISTICS MAGAZINE SEPTEMBER 1987



PRODUCT LIFE CYCLES:

LOGISTICS RIDES THE ROLLER COASTER

CC2528 C10 DCE
SUSAN CARAER
CONGRESSIONAL INF SERVIC
4520 EAST WEST HIGHWAY
BETHESDA MD 20814

EXCELLENCE IN DISTRIBUTION AWARDS

WINNING RAIL STRATEGIES

STATE-BY-STATE DISTRIBUTION GUIDE

VOL. 86, NO. 9

CHILTON'S
DISTRIBUTION

SEPTEMBER 1987

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Logistics of Global Proportions

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EXPORTER, EDUCATE THYSELF!

What advice do readers have for companies trying to be more export competitive? **Learn**. *Learn about the product you're exporting and the markets you're entering. Learn export documentation. Learn trade restrictions. Learn how to price exports. Exporting can be tricky, but it can be done successfully, readers say, if you're armed with the right knowledge.*

"Exporting is not easy, but it is simple and cost-effective if you take the time to learn documentation, trade terms, restrictions, and pricing – rather than just giving it to a forwarder and saying, 'Handle it.'"– **Jack J. Hanus, corp. transportation mgr., Miller Electric Mfg. Co., Appleton, Wis.**

"Be as innovative in exporting – packaging, mode selection, consolidations, etc. – as you would be in the domestic market."–**Wesley F. Baxter, gen'l traffic mgr., Uniroyal Chemical Co., Middlebury, Conn.**

continued

I would rate the export expertise of our company as:
- sadly lacking 25%
- no worse than other U.S. companies 32%
- as good as our foreign competitors 19%
- great 24%

For my company to be more export competitive, we need to know more about:
- simple things like documentation 18%
- international transportation services 16%
- how distribution is done overseas 28%
- how our foreign competitors operate 33%

To help my company get more export competitive, I'd be willing to:
- take courses to learn more 34%
- take on exports in addition to my current work 27%
- travel overseas to visit shows, customers, etc. 25%
- move overseas to operate our international distribution network 9%

QUESTION OF THE MONTH

ANALYZING TRADEOFFS IN WAREHOUSING

Is your warehousing system adding value to your product? Or is it just a storage spot for costly inventories? Few companies today can justify large inventories just to avoid stock-outs and maintain customer service.

Top management is demanding greater return-on-investment in all assets, including inventory. Companies today are taking a harder look at their warehousing options to determine where steps can be eliminated and costs pared in the distribution pipeline. The tradeoffs between public and private warehousing, especially, are undergoing intense scrutiny.

Has this caused you to re-evaluate your warehousing strategy? What is your approach? Do you use your own warehouses, or have you turned your products over to a public warehouse? In your experience, have public warehouses taken steps to be more of a value-added service to you? Has this made them more competitive with your own warehouses?

Let us know on the DIALOGUE card below.

DIALOGUE September 1987

• Do you find that just-in-time and other inventory-reducing strategies are (check all that apply):
_____reducing inventory in all field warehouses, regardless of effect on customer service? _____reducing the number of private warehouses, but increasing the use of public warehouses to maintain customer service? _____reducing the number of public warehouses by consolidating inventory in fewer facilities, but maintaining similar total inventory levels? _____replacing field warehouse inventory with consolidation plans and direct shipments?

• If you have changed your warehousing strategies as a result of JIT or other inventory reduction strategies, what has been the result (check all that apply):
_____Lowered customer service levels but no apparent impact on sales; _____Lowered customer service levels and erosion of sales or orders; _____Lowered warehousing costs and `acceptable` increases in transportation costs; _____Lowered warehousing costs and `unacceptable` increases in transportation costs; _____Lower inventory levels, faster turns, greater profit, and little change in sales; _____Poorer coordination of inventory with sales and little savings in total distribution costs

Here's what I need public warehousers to do in order to give them more business:

_____

_____

_____

_____

_____

_____

NAME (print) _____ TITLE _____

COMPANY _____ PHONE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

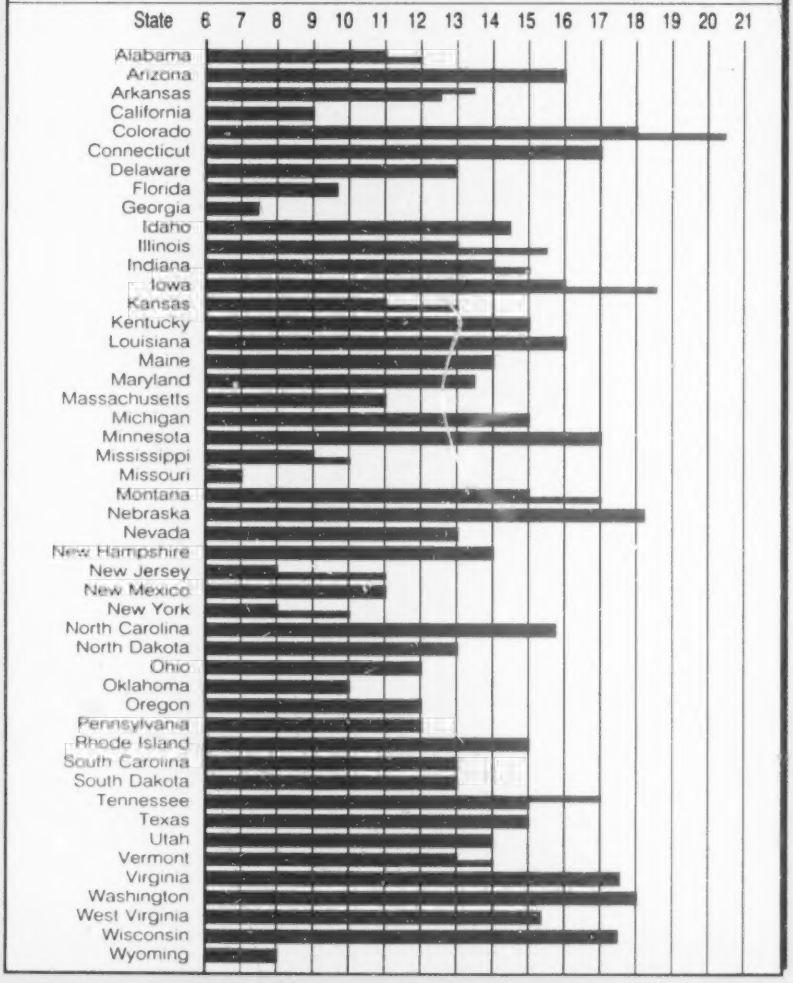
STATE STATISTICS

GUIDE TO

DISTRIBUTION & SITE LOCATION DECISIONS

DISTRIBUTION's annual rundown of business environments in the 48 contiguous states

STATE MOTOR FUEL TAX RATES



The information presented in this feature was gleaned from a number of sources. Because it was impossible to convey, in these charts, the full extent of the details provided by these sources, it is recommended that the reader consult these primary sources where appropriate.

One of the most useful tools for evaluating the states is the "General Manufacturing Climates" study. Conducted annually by Grant Thornton, an accounting and management consulting firm, it rates the states according to 22 economic factors. Contact Grant Thornton, 1700 Prudential Plaza, Chicago, Ill. 60601.

Data on motor fuel taxation is available from the Highway Users Federation, 1776 Massachusetts Ave., N.W., Washington, D.C. 20036-1993.

Information on highway regulations, taxes, and reciprocity agreements is also available from the National Private Trucking Association (formerly the Private Carrier Conference), 2200 Mill Rd., Alexandria, Va. 22314.

FUEL TAX RATES represents the taxes imposed on motor fuels in cents per gallon. The bars are doubled, the upper segment indicating the tax on gasoline, the lower segment the tax on diesel fuel. In many cases the two fuels are taxed at the same rate. In addition to the basic rates, many states also impose additional mileage taxes, surcharges, etc. Eight states raised one or both of their motor fuel tax rates during the past year. One, Nebraska, lowered its rates.
Source: Highway Users Federation.

STATE STATISTICS

MOTOR VEHICLE SIZE, WEIGHT AND ACCESS RESTRICTIONS

	height			width		length: straight truck					length: tractor/trailer					weight				access						
	13'6"	14'	14'6"	96"	102"	35'	40'	45'	60'	see notes	60'	65'	70'	see notes	not specified	73,000 – 79,999 lbs	80,000 lbs	over 80,000	see notes	5 miles	1 mile	3 miles	5 miles	10 miles	unlimited	see notes
Alabama	•			•			•				•				•		•				•				•	
Arizona	•			•			•										•									
Arkansas	•				•		•				•						•								•	
California		•			•		•					•					•			•						
Colorado	•				•		•						•				•	•								
Connecticut	•				•				•						•		•				•				•	
Delaware	•			•			•				•						•									a
Florida	•				•	•									•		•									b
Georgia	•			•					•		•						•				•					
Idaho		•			•		•								•		•								•	
Illinois	•			•						a				e		•						•				
Indiana	•				•					b					•		•								•	
Iowa	•			•			•				•						•						•			
Kansas		•			•					c					•			•								
Kentucky	•				•			•							•		•						•		•	
Louisiana	•			•			•								•				n			•				
Maine	•				•			•				•					•									c
Maryland	•			•			•								•	•										d
Massachusetts	•			•		•					•						•									e
Michigan	•			•			•							f			•						•			
Minnesota	•				•		•					•					•									f
Mississippi	•			•			•								•		•								•	
Missouri	•				•		•							g			•							•		
Montana	•				•		•								•		•									g
Nebraska			•		•		•					•						•							•	
Nevada		•			•		•						•			•									•	
New Hampshire	•				•	•									•		•									h
New Jersey	•			•		•									•		•									i
New Mexico	•				•		•					•					•									j
New York	•			•		•					•						•									k
North Carolina	•			•			•				•						•				•					
North Dakota	•				•		•		d					h			•						•			
Ohio	•				•		•								•		•								•	
Oklahoma	•			•			•							i				•								l
Oregon		•			•		•							j			•									m
Pennsylvania	•			•			•				•						•									n
Rhode Island	•			•			•								•		•									o
South Carolina	•				•	•					•						•				•					
South Dakota	•				•			•			•							•							•	
Tennessee	•			•			•							k			•								•	
Texas	•				•			•						l			•								•	
Utah		•			•			•						m			•								•	
Vermont	•				•				•		•						•									p
Virginia	•			•			•				•								•							
Washington		•			•		•								•										•	
West Virginia	•			•			•				•					•										q
Wisconsin	•				•		•				•						•				•					
Wyoming		•			•				•		•							•					•			

MOTOR VEHICLE RESTRICTIONS outlines the size and width limitations observed by the various states. The limits described are those imposed on vehicles travelling on state and non-designated highways. Limits governing vehicles travelling on the insterstate system are governed by the provisions of the Surface Transportation Assistance Act. Also included in the chart are the restrictions limiting access to the designated interstate highway system. The limitations listed under the "length" heading are those for a 2-axle straight truck, and for 3-axle tractor, 2-axle trailer combinations. The limits listed are those in general application. Several exceptions or additional restrictions may be applied in some cases.

Notes, vehicle sizes and weights:

a – maximum length = 42 ft.
b – maximum lentgh = 36 ft.
c – maximum length = 42 ft., 6 in.
d – maximum length = 50 ft.
e – maximum 55 ft. wheelbase
f – maximum length = 59 ft.
g – maximum length = 53 ft.
h – maximum length = 75 ft.
i = maximum length = 53 ft.
j = maximum length = 50 ft.
k = maximum length = 48 ft.
l = maximum length = 57 ft.
m = maximum length = 48 ft.
n – not specified

Notes, interstate system access provisions:

a – By permit only
b – Rural interchanges 1 mi. (2 lane) and 3 mi. (4 lane), urban interchanges 1 mi on crossroads with 12-ft. lanes. Other access by petition
c – Rural interchanges 2 mi., urban interchanges 5 mi.
d – Shortest practical route
e – By permit only
f – Determine on case-by-case basis
g – No policy
h – By permit only for twins
i – By permit only for twins
j – 20 mi.
k – Permit required beyond 1,500 ft.
l – "very reasonable" access
m – All but local roads, twins not restricted
n – 2 mi.
o – Doubles restricted to 1 urban mi.,1 mi. on 2-lane roads, 3 mi. on 4-lane roads in rural areas
p – Unpermitted twins 5 mi for access to food, fuel, lodging, terminals
q – 2 mi.

STATE STATISTICS

AVERAGE WAGES

State	Avg. Wage/hr.	% Change	State	Avg. Wage/hr.	% Change
Alabama	$ 8.64	23.25	Nebraska	$ 9.26	15.61
Arizona	9.84	22.69	Nevada	9.36	11.16
Arkansas	7.76	23.96	New Hampshire	8.80	37.29
California	10.37	21.14	New Jersey	10.13	25.84
Colorado	9.81	18.48	New Mexico	8.78	34.25
Connecticut	10.07	31.29	New York	9.92	26.53
Delaware	10.11	22.10	North Carolina	7.54	26.94
Florida	8.02	22.82	North Dakota	8.18	14.89
Georgia	8.34	30.93	Ohio	11.56	21.30
Idaho	9.66	17.38	Oklahoma	9.80	19.51
Illinois	10.67	19.75	Oregon	10.56	11.51
Indiana	10.81	15.37	Pennsylvania	9.74	17.35
Iowa	10.33	7.60	Rhode Island	7.90	29.51
Kansas	9.74	20.99	South Carolina	7.92	28.16
Kentucky	9.86	25.45	South Dakota	7.72	8.43
Louisiana	10.60	23.54	Tennessee	8.58	27.68
Maine	8.65	29.88	Texas	9.65	21.38
Maryland	9.96	18.71	Utah	10.05	29.84
Massachusetts	9.24	31.81	Vermont	8.83	30.04
Michigan	12.80	21.56	Virginia	8.84	29.24
Minnesota	10.20	21.43	Washington	11.77	12.74
Mississippi	7.46	24.13	West Virginia	10.33	17.95
Missouri	9.80	24.05	Wisconsin	10.35	17.61
Montana	10.95	20.46	Wyoming	9.70	22.94

AVERAGE WAGES represents the average hourly wage paid to manufacturing workers. The column labeled "% change" indicates the trend in the average manufacturing wage over the last three years. As was the case last year, the lowest average wage is paid in Mississippi, and the highest in Michigan. Both states' average wages are growing at rates which suggest they will maintain their current rank in the near future. Regionally, the Southeast presents the most favorable wage climate, with an overall average of $8.36/hr. per worker. At the same time, however, wages in the Southeast are rising faster than most areas of the country, as are those in New England, the region ranking second in average wages paid. Source: General Manufacturing Climates, Grant Thornton.

UNIONIZATION

State	Union Workforce	% Change	State	Union Workforce	% Change
Alabama*	17.59%	-7.24	Nebraska*	10.43%	-14.08
Arizona*	4.31	-4.04	Nevada*	7.62	-6.58
Arkansas*	13.64	-11.07	New Hampshire	7.41	-4.53
California	23.88	-6.03	New Jersey	24.17	-4.38
Colorado	10.52	-3.23	New Mexico	11.76	-15.43
Connecticut	15.56	-3.03	New York	51.05	-9.90
Delaware	21.21	10.52	North Carolina*	5.09	1.38
Florida*	8.93	-0.67	North Dakota*	12.26	-19.40
Georgia*	12.94	-3.97	Ohio	42.78	-10.25
Idaho*	10.25	-18.72	Oklahoma	17.42	-0.76
Illinois	34.27	-40.92	Oregon	23.86	-6.70
Indiana	42.83	5.45	Pennsylvania	43.14	-3.74
Iowa*	26.27	-25.94	Rhode Island	11.19	-2.21
Kansas*	12.54	-5.89	South Carolina*	3.76	-0.99
Kentucky	25.96	-11.67	South Dakota*	3.52	-6.88
Louisiana*	21.47	10.88	Tennessee*	14.55	-8.67
Maine	19.81	3.12	Texas*	15.20	2.38
Maryland	31.13	-2.46	Utah*	5.77	-7.56
Massachusetts	19.12	-5.48	Vermont	9.33	-4.29
Michigan	51.62	-10.12	Virginia*	12.25	3.28
Minnesota	20.39	-28.79	Washington	31.96	-19.59
Mississippi*	8.97	-0.43	West Virginia	34.24	-3.86
Missouri	34.58	-44.89	Wisconsin	27.79	-22.54
Montana	25.36	-6.54	Wyoming*	19.75	-3.58

UNIONIZATION indicates the degree to which the available workforce is unionized. This factor has a potential effect on the future cost of labor and on labor relations. The second column indicates the change in unionization as a percentage, over four years. Those states marked with an asterisk have enacted right-to-work laws. The figures show the decline in union membership is accelerating. In 14 states, membership has dropped by over 10 percent, while in Missouri and Illinois there has been an erosion of over 40 percent. Nationwide, membership was down 7.92 percent. Unions made the strongest showing in the South Central region. But even there they were barely able to hold their own, growing by a scant 0.36 percent. Source: General Manufacturing Climates, Grant Thornton.

LABOR PRODUCTIVITY

State	Work Stoppages	Value Added/$	State	Work Stoppages	Value Added/$
Alabama	0.216%	$3.51	Nebraska	0.081%	4.44
Arizona	0.051	5.01	Nevada	0.000	4.50
Arkansas	0.140	3.90	New Hampshire	0.000	3.86
California	0.025	4.71	New Jersey	0.003	4.63
Colorado	0.000	4.65	New Mexico	0.000	4.03
Connecticut	0.105	4.34	New York	0.033	5.19
Delaware	0.096	4.33	North Carolina	0.000	4.22
Florida	0.001	5.02	North Dakota	0.000	5.05
Georgia	0.015	4.15	Ohio	0.202	3.77
Idaho	0.050	3.98	Oklahoma	0.000	3.93
Illinois	0.139	4.13	Oregon	0.171	3.59
Indiana	0.393	3.67	Pennsylvania	0.224	3.81
Iowa	0.806	4.70	Rhode Island	0.387	3.56
Kansas	0.000	4.41	South Carolina	0.000	3.66
Kentucky	0.010	4.43	South Dakota	1.000	4.45
Louisiana	0.003	5.09	Tennessee	0.000	4.06
Maine	0.698	3.45	Texas	0.018	4.94
Maryland	0.008	4.01	Utah	0.428	4.45
Massachusetts	0.054	4.69	Vermont	0.000	4.54
Michigan	0.104	3.26	Virginia	0.030	4.23
Minnesota	0.220	4.69	Washington	0.102	4.10
Mississippi	0.000	3.94	West Virginia	0.096	3.75
Missouri	0.067	4.66	Wisconsin	0.014	3.80
Montana	0.149	3.26	Wyoming	0.000	4.60

LABOR PRODUCTIVITY represents, in the first column, the percentage of working hours lost due to work stoppages. The second set of figures shows the average value added to manufacturing production for each dollar invested in payroll expenses. The range in both sets of figures is wide. Several states recorded no work stoppages within the scope of the survey (data was not collected for stoppages involving fewer than 1,000 workers). On the other hand, South Dakota reported over 1 percent of available time lost. The value of each added dollar of payroll ranged from $3.26 to $5.19, but while the figures among individual states varied greatly, the differences from region to region were less dramatic. Source: General Manufacturing Climates, Grant Thornton.

STATE STATISTICS

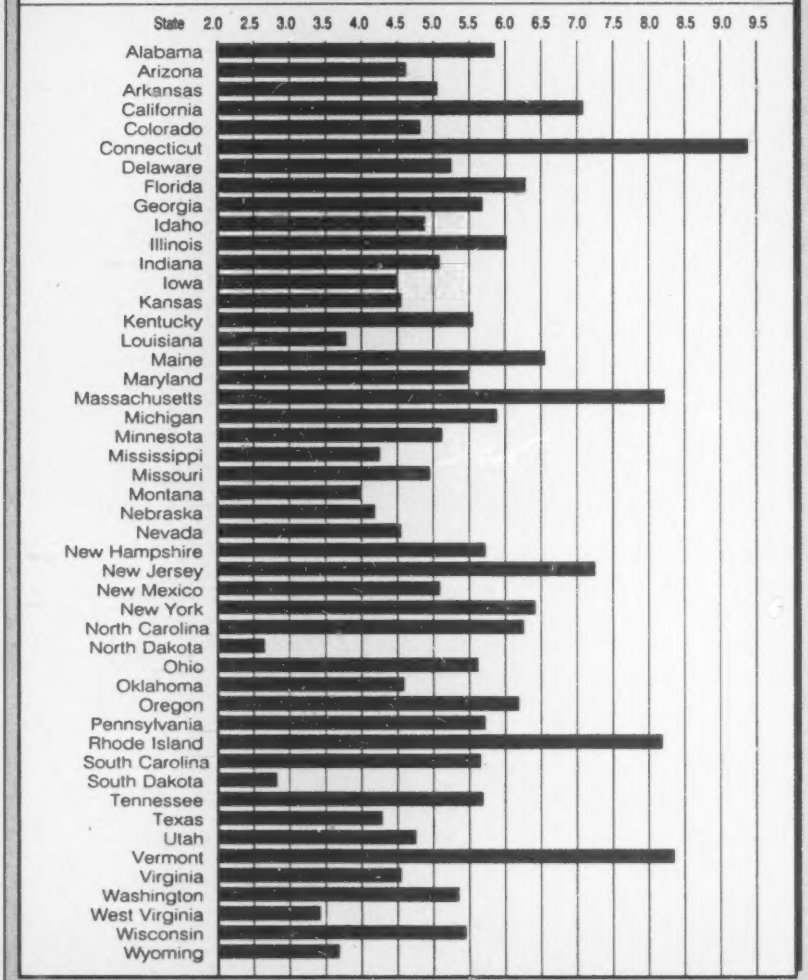
RECIPROCITY AGREEMENT PARTICIPATION

State	MRA	IRP	UPA	State	MRA	IRP	UPA
Alabama	YES	YES	NO	Nebraska	NO	YES	YES
Arizona	YES	YES	YES	Nevada	NO	NO	YES
Arkansas	NO	YES	NO	New Hampshire	NO	NO	NO
California	NO	YES	YES	New Jersey	YES	NO	NO
Colorado	YES	YES	YES	New Mexico	NO	NO	YES
Connecticut	NO	YES	NO	New York	NO	NO	NO
Delaware	NO	NO	NO	North Carolina	YES	YES	NO
Florida	YES	YES	NO	North Dakota	YES	YES	YES
Georgia	YES	NO	NO	Ohio	NO	NO	NO
Idaho	NO	YES	YES	Oklahoma	NO	YES	NO
Illinois	YES	YES	YES	Oregon	NO	YES	YES
Indiana	YES	YES	NO	Pennsylvania	NO	YES	NO
Iowa	NO	YES	YES	Rhode Island	NO	NO	NO
Kansas	YES	YES	YES	South Carolina	YES	YES	NO
Kentucky	YES	YES	NO	South Dakota	NO	YES	YES
Louisiana	YES	YES	NO	Tennessee	YES	YES	NO
Maine	YES	NO	NO	Texas	NO	YES	NO
Maryland	YES	NO	NO	Utah	NO	YES	YES
Massachusetts	NO	NO	NO	Vermont	YES	NO	NO
Michigan	YES	YES	NO	Virginia	YES	YES	NO
Minnesota	NO	YES	YES	Washington	NO	NO	YES
Mississippi	YES	YES	NO	West Virginia	NO	YES	NO
Missouri	YES	YES	YES	Wisconsin	NO	YES	NO
Montana	YES	YES	YES	Wyoming	NO	YES	YES

RECIPROCITY AGREEMENT PARTICIPATION is a checklist of the three major truck registration agreements:

- **Multistate Reciprocal Agreement**—a registration plate issued in the home state is honored by all participants. Fuel taxes are paid to each state on a per-mile basis;
- **International Registration Plan**—based on a single apportioned registration plate and a card carried inside the vehicle which lists other states it can operate in. Registration fees are based on historical or forecast mileage;
- **Uniform Proration Agreement**—a home state license is issued containing spaces for decals purchased from other states. Registration fees are based on average mileage. Source: Commercial Carrier Journal.

ENERGY COSTS PER MILLION BTUs



ENERGY COSTS indicates the cost, in dollars, of fuel and electric energy. Statistics are not available for years after 1981. The figures thus represent approximations based on forecasting current prices from the 1981 statistics. Businesses in New England have paid the most for energy. The region paid over 28 percent more for fuel (The average cost per million BTUs in New England was $7.10.) than did the second most fuel-expensive region. Source: General Manufacturing Climates, Grant Thornton.

WHERE TO DRAW THE LINE

Several charts in this feature summarize information gathered by Grant Thornton in its "General Manufacturing Climates" survey. For the purposes of the study, the 48 contiguous states were grouped into eight regions as follows:

Southwest–Arizona, Colorado, Nevada, New Mexico and Utah;
Southeast–Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Virginia;
North Central–Idaho, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota and Wyoming;
South Central–Arkansas, Louisiana, Oklahoma and Texas;
New England–Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont;
MidEast–Delaware, Maryland, New Jersey, New York, Pennsylvania, West Virginia;
West–California, Oregon and Washington, and;
Great Lakes–Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin.

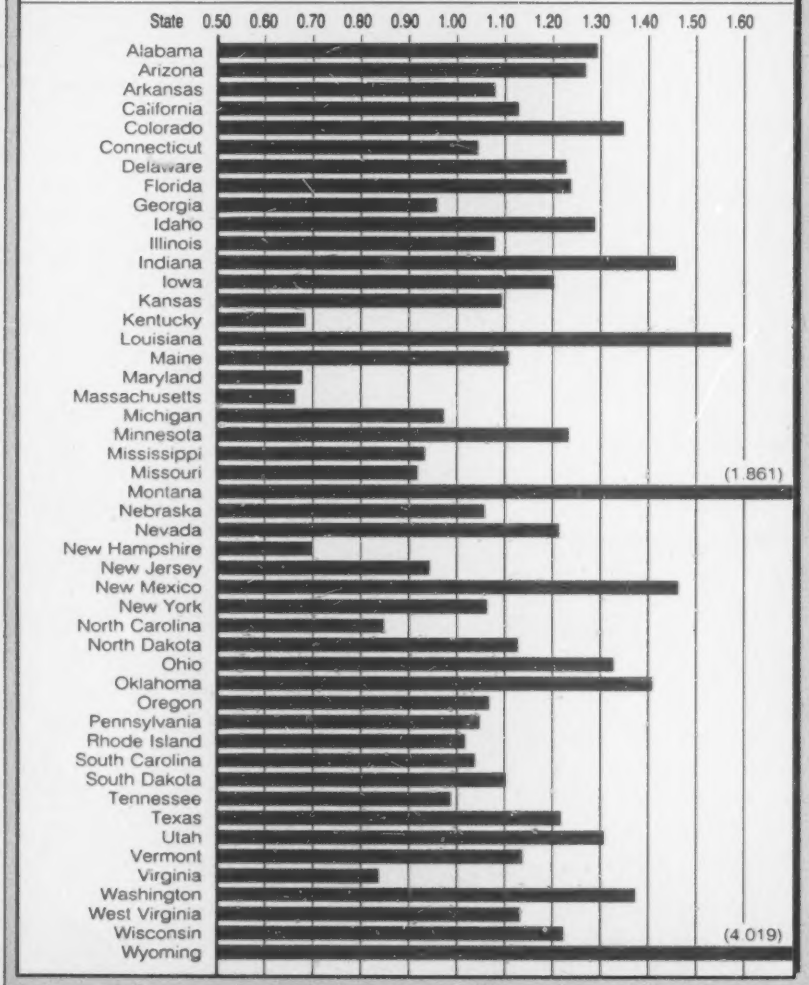
STATE STATISTICS

STATE AND LOCAL TAX RATES

State	Taxes/ $1,000	% Change	State	Taxes/ $1,000	% Change
Alabama	$ 89.40	3.56%	Nebraska	$ 99.12	1.24%
Arizona	94.91	-18.00	Nevada	64.93	-0.61
Arkansas	87.90	7.34	New Hampshire	68.90	-12.09
California	94.46	-1.24	New Jersey	108.53	-7.85
Colorado	83.18	-14.37	New Mexico	79.27	-2.51
Connecticut	99.24	-2.99	New York	158.43	-7.37
Delaware	77.38	-18.98	North Carolina	89.44	-1.69
Florida	72.77	-6.11	North Dakota	81.70	7.27
Georgia	88.91	-7.24	Ohio	105.42	21.72
Idaho	91.32	0.11	Oklahoma	71.08	2.85
Illinois	110.32	11.03	Oregon	102.82	10.92
Indiana	95.70	13.18	Pennsylvania	105.98	-0.29
Iowa	111.80	19.90	Rhode Island	122.90	1.55
Kansas	96.74	6.52	South Carolina	94.56	3.44
Kentucky	86.01	2.79	South Dakota	85.92	2.15
Louisiana	77.20	1.94	Tennessee	80.71	-7.24
Maine	105.35	-3.95	Texas	66.36	7.64
Maryland	99.75	-8.77	Utah	109.87	8.48
Massachusetts	105.40	-27.03	Vermont	93.78	-14.43
Michigan	129.75	14.11	Virginia	88.68	-0.26
Minnesota	122.75	7.74	Washington	103.36	7.23
Mississippi	94.04	-2.93	West Virginia	100.48	27.89
Missouri	85.27	3.63	Wisconsin	132.66	12.21
Montana	93.47	11.71	Wyoming	105.10	28.30

STATE AND LOCAL TAX RATES indicates the level of all state and local taxes per $1,000 of personal income. "% Change" indicates the trend in taxation over five years. Data is based on the 1984 tax year. The most recent available figures indicate the trend towards lower tax rates is gaining momentum, with the result that nearly as many states experienced a decrease in taxation as had tax hikes over the sample period. Performance in taxing history follows strong regional lines. In three regions, North Central, South Central, and the Great Lakes, no states show a net reduction over the five-year period. At the same time 14 of the 17 states in the Southwest, New England, and Mid East regions lowered taxes. Source: General Manufacturing Climates, Grant Thornton.

EXPENDITURES VS. INCOME



EXPENDITURES VS. INCOME indicates the ratio of the growth of state government spending with the growth of personal income. This figure represents the fiscal responsibility of the state governments, and the relative potential for increased tax burdens in the states. Results less than 1.00 indicate conservative spending policies, while results over 1.00 show that government spending is increasing faster than personal income. Those states with a high ratio are increasing their debt, or at least depleting reserves. Over the long term these states will experience either increasing tax rates or cuts in government services. The states seem to be in better shape in this regard than the federal government. Roughly one-third of the states are either below or just slightly above the 1.00 mark, and there are indications of movement in a positive direction. The figures presented are based on data obtained for the years 1980 to 1985.

The Southeastern region contains six of the top ten performers in this comparison, but the New England states show the best overall average of any region. The North Central region shows the worst average, but that result is due primarily to the astronomical figure turned in by Wyoming. Excluding Wyoming, the North Central region's average is fairly moderate. Source: General Manufacturing Climates, Grant Thornton.

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